

What is claimed is:

1. An active antenna comprising:

an antenna;

5 a high-output amplifier that amplifies a signal and outputs the signal to said antenna;

a low-noise amplifier that amplifies the signal received by said antenna;

10 an antenna substrate that includes said antenna and a feeder circuit that feeds power to said antenna;

an RF substrate that is mounted with said high-output amplifier and said low-noise amplifier which are active devices; and

15 a heat radiation block inserted between said antenna substrate and said RF substrate,

wherein said antenna substrate and said RF substrate are connected through an electromagnetic field by a connection slot.

20 2. The active antenna according to claim 1, further comprising:

a plurality of said antennas;

the same number of said high-output amplifiers as said antennas;

25 a splitter that splits a signal into as many signals as said antennas and outputs the signals to said high-output amplifier; and

a combiner that combines the signals received by

said antennas and outputs the combined signal to said low-noise amplifier,

wherein signals are spatially combined.

- 5 3. The active antenna according to claim 2, wherein a variable phase circuit is interposed between said high-output amplifier and said splitter or between said high-output amplifier and said antenna.
- 10 4. The active antenna according to claim 2, wherein a variable gain circuit is interposed between said high-output amplifier and said splitter or between said high-output amplifier and said antenna.
- 15 5. The active antenna according to claim 2, wherein a variable phase circuit is interposed between said combiner and said antenna.